

# **DETECTING HALFTONE MODULATIONS EMBEDDED IN AN IMAGE**

## **ABSTRACT**

Systems and methods of detecting halftone modulations that are embedded in an image are described. The halftone modulations represent an ordered sequence of digital halftone microscreens that encodes information that has been embedded in the image. In one embodiment, the embedded information is detected by applying a  
5 respective matched filter to the image for each of two or more different halftone modulations to identify the ordered sequence of halftone modulations embedded in the image. This approach provides an effective, robust and efficient scheme for detecting such halftone modulations without knowledge of the original image before halftone modulation.

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